		Application No.	Applicant(s)
Notice of Allowability		10/615,898	GRAB ET AL.
		Examiner	Art Unit	
		Pramila Parthasarathy	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *4/19/2007*.

2. ☒ The allowed claim(s) is/are *1-7,9-33; Renumbered as 1-32*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

      NASSER MOAZZAMI
    SUPERVISORY PATENT EXAMINER
    TECHNOLOGY CENTER 2100

7,9,07

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

Response to Arguments

1.　　　Applicant's arguments and amendments with respect to Claims 1 – 7 and 9 – 33 have been fully considered and in view of Applicant's agreement to Examiner's proposed amendments to Claims 1 – 7 and 9 – 33 is persuasive.

Allowable Subject Matter

2.　　　Claims 1 – 7 and 9 – 33 are allowed and renumbered as 1 – 32.

3.　　　The following is an examiner's statement of reasons for allowance: The Admitted prior art [Nardone et al. U.S. Patent 5,805,700] discloses "video images that are selectively encrypted, in accordance with an encryption policy to degrade the video images to at least a virtually useless state, if the selectively encrypted compressed video images were to be rendered without decryption" and [Fetkovich et al. U.S. Patent 7,151,832] "protecting stream of data by encrypting the stream of data at the encryti8on unit for transfer thereof from the encryption unit to the decryption unit; dynamically varying the encrypting of the stream of data at the encryption unit, wherein the dynamically varying is responsive to occurrence of a predefined condition in the stream of data; and decrypting the encrypted data at the decryption unit, the decrypting accounting for the dynamic varying of the encrypting by the encryption unit using the changed encryption parameter".

However, the admitted prior arts taken independently or in combination, do not

disclose, teach or suggest "creating a set of encrypted frames by encrypting at least

selected portions of selected frames of said sequence of frames using the frame

encryption keys in accordance with a frame encryption function; generating frame

decryption information necessary to decrypt said set of encrypted frames including an

encryption key pointer identifying a decryption key to be used in the decryption of each

encrypted frame; and assembling at least said set of encrypted frames, unencrypted

frames of said sequence of frames, and said frame decryption information to produce

the protected stream of compressed video content; wherein said frame decryption

information is synchronized with said set of encrypted frames into a synchronized frame

decryption stream".

4.   Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

5.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with David J. Bailey, registration number 59,632 on February 14, 2007.

IN THE CLAIMS:

1.   (Amended) A method for producing a protected stream of compressed video content, said method comprising:

receiving an input stream of compressed video content containing a sequence of frames;

generating a frame encryption key and ~~including~~ storing the encryption key in a ~~table of encryption~~ key[[s]] table;

creating a set of encrypted frames by encrypting at least selected portions of selected frames of said sequence of frames using the frame encryption keys in accordance with a frame encryption function;

generating frame decryption information necessary to decrypt said set of encrypted frames including an encryption key pointer identifying a decryption key to be used in the decryption of each encrypted frame; and

assembling ~~said protected stream using~~ at least said set of encrypted frames, unencrypted frames of said sequence of frames, and said frame decryption information to produce the protected stream of compressed video content;

wherein said frame decryption information is synchronized with said set of encrypted frames into a synchronized frame decryption stream.

2.   (Amended) The method of claim 1, wherein said synchronized frame decryption stream ~~information~~ includes references to frame encryption keys in the key table.

3.   (Amended) The method of claim 1, wherein said synchronized frame decryption stream information includes encryption status information corresponding to each frame of said protected stream.

4.   (Amended) The method of claim 1, wherein said synchronized frame decryption stream information includes a reference to a decryption key in the key table.

5.   (Currently amended) The method of claim 1, wherein said synchronized frame decryption stream information includes intra-frame encryption offset information corresponding to each encrypted frame of said protected stream.

6.   (Currently amended) The method of claim 1, wherein said synchronized frame decryption stream information includes information identifying a data field size to be decrypted with respect to each encrypted frame of said protected stream.

14.   (Currently amended) A method for decrypting a protected stream of compressed video content comprising:

        receiving an input stream of compressed video content containing encrypted frames and unencrypted frames;

        receiving frame decryption information necessary to decrypt said encrypted frames, said frame decryption information is synchronized with said set of

encrypted frames into a synchronized frame decryption stream and distinguishes said encrypted frames from said unencrypted frames;

obtaining an applicable frame decryption key from the received frame decryption information;

~~receiving an input stream of compressed video content containing encrypted frames and unencrypted frames;~~

~~receiving frame decryption information necessary to decrypt said encrypted frames, said frame decryption information is synchronized with said set of encrypted frames and distinguishes said encrypted frames from said unencrypted frames;~~ and

decrypting selected portions of said encrypted frames using a frame decryption function in accordance with said frame decryption information, which identifies the specific portions of the frames to be decrypted and the applicable frame decryption key[[s]] from the frame decryption information.

15.   (Currently amended) The method of claim 14 wherein said input stream and said synchronized frame decryption stream ~~information~~ collectively comprise a protected video stream, said synchronized frame decryption stream ~~information~~ being synchronized with said encrypted frames within said input stream.

16.   (Currently amended) The method of claim 14 wherein said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ includes encryption status information corresponding to each of said encrypted frames.

17.   (Currently amended) The method of claim 14 wherein said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ includes a reference to a frame decryption key for each of said encrypted frames.

18.   (Currently amended) The method of claim 14 wherein said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ includes intra-frame encryption offset information corresponding to each of said encrypted frames.

19.   (Currently amended) The method of claim 14 wherein said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ includes size information identifying a data field size to be decrypted with respect to each of said encrypted frames.

21.   (Currently amended) An encrypting digital video encoder comprising:

a video processing unit for generating a plurality of input data streams in response to a sequence of uncompressed video frames;

an entropy compression unit for creating, based upon said plurality of input data streams, compressed video content containing a sequence of compressed frames; and

<u>a video encryption module configured to generate a table of encryption keys;</u>

<u>wherein the video encryption module is also configured to create a set of encrypted frames by encrypting at least selected portions of selected frames of said sequence of compressed frames using said frame encryption keys in accordance with a frame encryption function;</u>

wherein the<u></u>[[a]] video encryption module <u>is also</u> configured to transform said sequence of compressed frames into a protected video stream containing at least [[a]]<u>the</u> set of encrypted frames<u>, the unencrypted frames</u> and <u>a</u> synchronized frame decryption <u>stream</u> ~~information~~ necessary to decrypt said set of encrypted frames;

~~wherein the video encryption module also generates a table of encryption keys;~~

wherein said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ includes ~~references~~ <u>encryption key pointers identifying</u> ~~to~~ encryption <u>a decryption</u> key[[s]] <u>to be used in the decryption of each encrypted frame.</u>

22.   (Currently amended) The encoder of claim 21 wherein said protected video stream is comprised of an encrypted video stream including said set of encrypted frames and unencrypted ones of said compressed frames, said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ being synchronized with said encrypted video stream.

23.   (Currently amended) The encoder of claim 22 wherein said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ includes encryption status information corresponding to each frame of said encrypted video stream.

24.   (Currently amended) The encoder of claim 22 wherein said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ also includes, intra-frame encryption offset information, and data field size decryption information corresponding to each frame of said encrypted video stream.

28.   (Currently amended) A decrypting digital video decoder comprising:

        a video decryption module configured to receive a protected input stream of compressed video content containing at least a set of encrypted frames and synchronized frame decryption <u>stream</u> ~~information~~, said <u>synchronized</u> frame decryption <u>stream</u> ~~information~~ being necessary for decrypting said set of encrypted frames so as to form a set of decrypted frames;

        <u>wherein the video decryption module is further configured to obtain an applicable frame decryption key from the received frame decryption stream;</u>

        <u>wherein the video decryption module is further configured to generate the set of decrypted frames by decrypting selected portions of the encrypted frames in accordance with said frame decryption stream, which identifies the specific portions of the frames to be decrypted and the applicable frame decryption key;</u>

an entropy decompression unit for creating, based at least in part upon said set of decrypted frames, a plurality of video data streams; and

a video processing unit for generating an output stream of uncompressed video content in response to said plurality of video data streams;

wherein said synchronized frame decryption stream information includes references to encryption key pointers identifying an applicable encryption decryption key[[s]] to be used in the decryption of each encrypted frame.

29.   (Currently amended) The decoder of claim 28 wherein said protected input stream is comprised of an encrypted video stream including said set of encrypted frames and unencrypted frames, said synchronized frame decryption stream information being synchronized with said encrypted video stream.

30.   (Currently amended) The decoder of claim 29 wherein said synchronized frame decryption stream information includes encryption status information corresponding to each frame of said encrypted video stream.

31.   (Currently amended) The decoder of claim 29 wherein said synchronized frame decryption stream information also includes intra-frame encryption offset information, and data field size decryption information corresponding to each frame of said encrypted video stream.
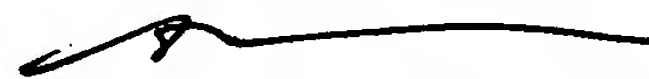
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on 8:00a.m. To 5:00p.m.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-232-4195. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pramila Parthasarathy
July 08, 2007.

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